

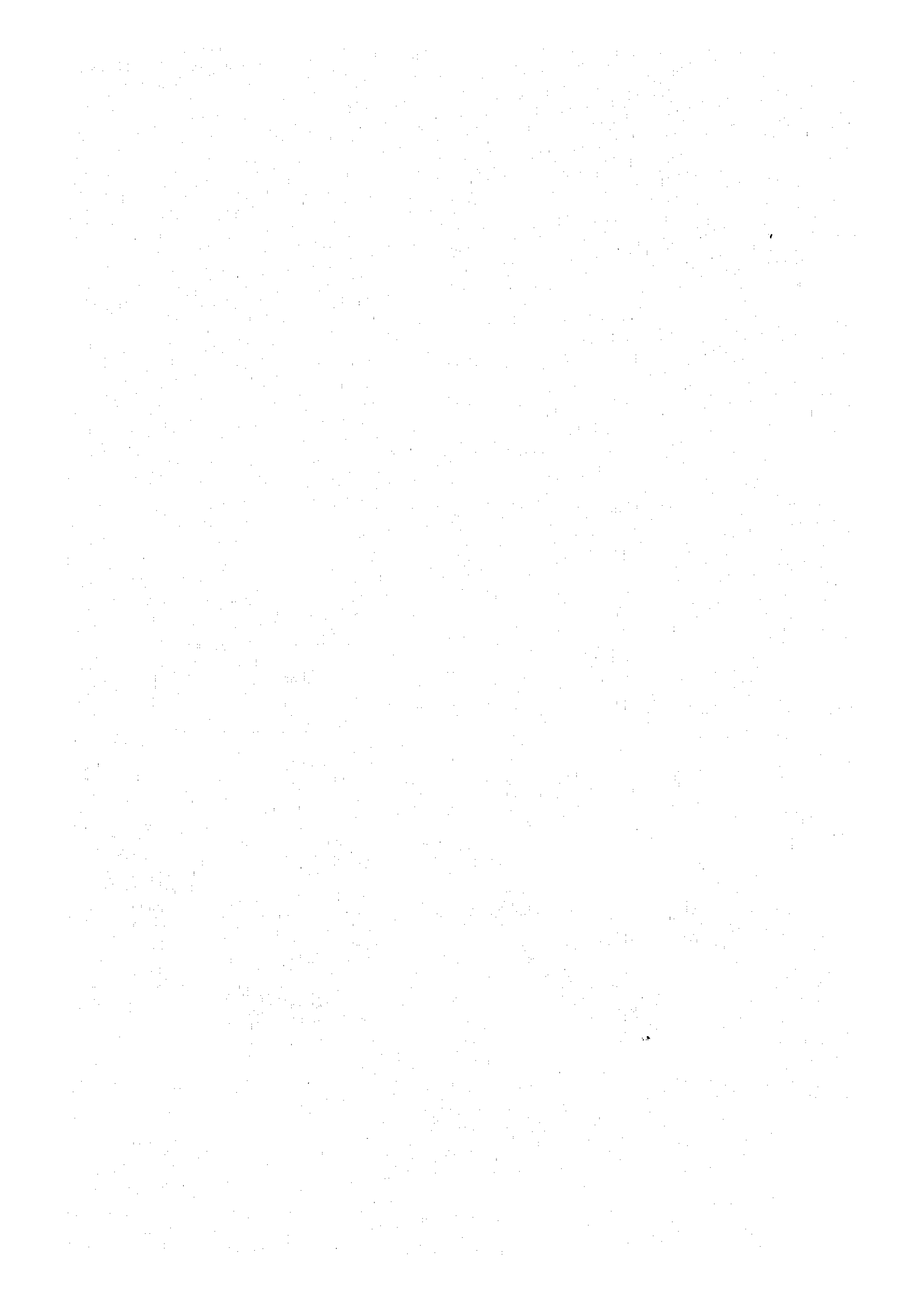
REPORT  
ON  
TOPEX SEMINAR IN HYDROLOGY COMPONENT  
AND  
WARNING DISSEMINATION /  
INFORMATION EXCHANGE COMPONENT IN 1983

AUGUST 1983

JAPAN INTERNATIONAL COOPERATION AGENCY  
TRAINING AFFAIRS DEPARTMENT

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AUGUST 1983

JAPAN INTERNATIONAL COOPERATION AGENCY  
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MEMBERSHIP INFORMATION

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## I. OUTLINE OF THE SEMINAR





## I. OUTLINE OF THE SEMINAR

### i) TITLE OF THE SEMINAR

TOPEX SEMINAR on Hydrology Component and Warning Dissemination/  
Information Exchange Component

### ii) DURATION

From June 30 (Thursday) to August 6 (Saturday), 1983

### iii) PURPOSE OF THE SEMINAR

Typhoons have been causing damage to human lives and prosperities in Southeast Asia and the Pacific Ocean Region. Under the circumstances, the Typhoon Committee was established, and the excusion of the Typhoon Operational Experiment (referred as "TOPEX" hereinafter) was later decided at the Secretariat of the Committed. As an International Cooperation Programme, Japan was the host country for the Seminar in order to promote the improvement of the analysis, warning dissemination, information exchange, and disaster prevention system.

The TOPEX consists of three components; 1) Meteorology, 2) Hydrology, and 3) Warning Dissemination/Information Exchange (referred as "WD-IE" hereinafter), and this Seminar concerns 2) & 3).

The present situation of the social and technical countermeasures concerning hydrology and WD-IE Components in Japan will be introduced during the lectures and observation tours, and the discussions among participants will enhance the improvement of the activities in hydrology and WD-IE in their countries. It is expected that the above-mentioned activities will reduce damage caused by typhoons in the participating countries.

### iv) BACKGROUND OF THE SEMINAR

The TOPEX project was to be held under the programme of the Typhoon Committed Secretariat, established in 1968 by ESCAP (Economic and Social Commission for Asia and the Pacific) and WMO (World Meteorological Organization), with a view to reducing danger to human lives and damage to prooperties caused by typhoon. For the execution of the programme, TCS held an annual planning meeting for discussing

the concrete experimental plans, including the execution of the Seminar.

They had a meeting last February in which they worked out the detail schedule for the Seminar of this year.

This year, the Seminar was the last one for the Programme. The total of ten participants from five member countries of the TOPEX and/or TCS participated in 1981 and 1982.

v) TRAINING INSTITUTIONS

(1) Science and Technology Agency

1-2-2, Kasumigaseki, Chiyoda-ku, Tokyo

(2) Ministry of Construction

2-1-3, Kasumigaseki, Chiyoda-ku, Tokyo

(3) National Land Agency

1-6-19, Azabudai, Minato-ku, Tokyo

vi) ACCOMMODATION



Shinjuku New City Hotel


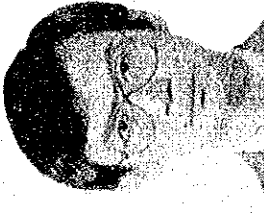
4-31-1, Nishi-shinjuku, Shinjuku-ku, Tokyo

II. LIST OF PARTICIPANTS TO THE SEMINAR



II. LIST OF PARTICIPANTS TO THE SEMINAR in 1983

COUNTRY	NAME	PRESENT POST OF PARTICIPANT	ADDRESS
CHINA	<p>MR. <u>HUANG</u> KONGHAI</p> 	<p>Assistant Engineer, Zhejiang Provincial Hydrological Station</p>	<p>* OFFICE ADDRESS Meihuabei, Hangzhou, CHINA</p> <p>* HOME ADDRESS Meihuabei, Hangzhou, Zhejiang Province, CHINA</p>
PHILIPPINES	<p>MR. CIPRIANO <u>C. FERRARIS</u></p> 	<p>Weather Service Chief, Weather Bureau, P.A.G.A.S.A.</p>	<p>* OFFICE ADDRESS 1424, Quezon Avenue, Quezon City, PHILIPPINES c/o P.A.G.A.S.A. (Weather Bureau)</p> <p>* HOME ADDRESS 45, Dr., Alejos Street, Quezon City, PHILIPPINES</p>

COUNTRY	NAME	PRESENT POST OF PARTICIPANT	ADDRESS
PHILIPPINES	MR. SALVADOR <u>G. ESTUDILLO</u> 	Acting Regional Director, Region VII, Cebu City OFFICE of Civil Defense, Ministry of National Defense	* OFFICE ADDRESS Camp General Emilio Aguinaldo Quezon City, PHILIPPINES (Jakesalem Street, Cebu City, PHILIPPINES) * HOME ADDRESS #22, Navarro Street, Ormoc City PHILIPPINES
THAILAND	MR. <u>NIRANI</u> KALAYANAMIT 	Chief of Inspection Civil Defense Division, Local Administration epartment, Ministry of Interior	* OFFICE ADDRESS Ministry of Interior, Bangkok, THAILAND * HOME ADDRESS 38, Soi Sasana, Rama 6 Road, Bangkok 4, Thailand, 10400

### III. SCHEDULE FOR THE SEMINAR





III. SCHEDULE FOR THE TOPEX SEMINAR ON HYDROLOGY AND WARNING DISSEMINATION/INFORMATION EXCHANGE COMPONENT IN 1983

Date	Time	Place	Subject	Lecturer
June 30 (Thu)			Arriving in Japan	
July 1 (Fri)		TIC	BRIEFING on the RULES and REGULATION of JICA	
4 (Mon -8 (Fri)		TIC	GENERAL ORIENTATION	
*EXTRA SCHEDULE				
7 (Thu)	PM	TIC	BRIEFING on the TRAINING PROGRAMMES	
11 (Mon)	AM		COURTESY CALL at MINISTRIES AND GOVERNMENTAL AGENCIES	
	PM	Ministry of Foreign Affairs	MULTILATERAL COOPERATION OF JAPAN	Mr. SAITO, Ministry of Foreign Affairs
12 (Tue)	AM	NCH	DISASTERS IN JAPAN	Mr. ADACHI, National Land Agency
	PM	NCH	RIVERS IN JAPAN	Mr. YOKOTA, Ministry of Construction
13 (Wed)		NCH	PRESENTATION & DISCUSSION OF COUNTRY REPORT	Dr. KINOSHITA, Science and Technology Agency
14 (Thu)	AM	NCH	FLOOD FORECASTING AND WARNING (I)	Mr. TERAKAWA, Ministry of Construction
	PM	NCH	FLOOD FORECASTING AND WARNING (II)	- ditto -
15 (Fri)	AM	NCH	FLOOD RISK MAPPING (I)	Mr. YOSHINO, Ministry of Construction
	PM	NCH	FLOOD RISK MAPPING (II)	Mr. YOSHIKAWA, Ministry of Construction
16 (Sat)		Tone River	OBSERVATION OF THE FLOOD-DEFENCE TRAINING	
18 (Mon)	AM	-	TOKYO TO KYOTO	
	PM	Dam of YORO R.	OBSERVATION	
19 (Tue)	AM	- ditto -	TECHNIQUE OF FLOOD FORECASTING	Mr. Ouchi, Ministry of Construction
	PM	- ditto -	OBSERVATION OF FACILITIES	
20 (Wed)	PM		KYOTO TO TOKYO	

NOTE: NCH = Shinjuku New City Hotel

Date	Time	Place	Subject	Lecturer
June 21 (Thu)		NCH	EVALUATION FORMAT MAKING on Hydrology Component	Mr. ASHIDA, Ministry of Construction
22 (Fri)		NCH	PRESENTATION & DISCUSSION of Evaluation Format	Mr. ASHIDA, Ministry of Construction
25 (Mon)	AM	NCH	NO LECTURE	
	PM	NCH	DISASTER-DEFENCE PLAN	Mr. ANDO, Fire Defence Agency
26 (Tue)	AM	NCH	GENERAL CONDITION of Torrential Rains in NAGASAKI	Mr. Oda, Nagasaki Prefecture Office
	PM	Shinagawa Ward Office	ANNOUNCEMENT & TRANSMISSION METHOD of Warning	Mr. HASHIMOTO, Tokyo Metropolitan Office
27 (Wed)	AM	NCH	ANALYSIS OF DISASTERS	Mr. MIZUTANI, Science and Technology Agency
	PM	Chiba Prefecture	DISASTER DEFENCE SYSTEM in the Region	Mr. SHIRAIISHI, Chiba Prefecture
28 (Thu)	AM	Japan Red Cross	METHOD & ACTIVITIES of RELIEF at the DISASTER OUTBREAK	Mr. ISOMOTO, The Japan Red Cross Society
	PM	NHK	PUBLIC RELATIONS of DISASTER INFORMATION	Mr. KOJIMA, Nihon Hoso Kyokai
29 (Fri)		NCH	DISCUSSION & EVALUATION on WD/IE COMPONENT	Mr. WATANABE, Science and Technology Agency
August 1 (Mon)	AM	NCH	ACTIVITIES OF TYPHOON COMMITTEE and TOPEX	Mr. YOKOUSHI, Typhoon Committed Secretariat
	PM	NCH	DISASTERS and SOCIETY	Mr. WATANABE, Science and Technology Agency
2 (Tue)		NCH	ENLIGHTENMENT of DISASTER-DEFENCE KNOWLEDGE	Dr. KINOSHITA, Science and Technology Agency
3 (Wed)		NCH	REPORT MAKING	Dr. WATANABE, Science and Technology Agency
4 (Thu)		NCH	PRESENTATION and DISCUSSION of REPORT	Mr. YOKOTA, Ministry of Construction
5 (Fri)	AM		PREPARATION for HOMECOMING	
	PM	JICA	EVALUATION/CLOSING CELEMONY	
6 (Sat)			COMING HOME	

IV. SUMMARY OF JICA'S FINAL REPORT



#### IV. SUMMARY OF JICA FINAL REPORT

The last TOPEX Seminar of the consecutive three years was closed in August, 1983. Lectures and observation tours for this year seemed to be appreciated very much by the participants, and we think that the seminar was successful as a whole. But there are some problems which we should take into consideration. The following is our summary based on the final reports submitted by the participants.

##### 1) Duration and Contents of Training

The contents of the lectures were highly informative and the programmes of activities were systematically well organized as a whole, but most of the participants suggested that the duration should be extended some more. This may be due to the fact that the contents of the lectures covered such a wide area of Flood Forecast, Disaster-Prevention and Warning-Dissemination, and that they could spend only half a day or so on a single subject. The Seminar for this year was participated by four participants only, who were engaged in heated questions and answers in class, and we trust that they must have studied much of the subject matter through the lectures.

As mentioned above, the TOPEX Seminar came to an end this year, but there were many opinions to seek the establishment of a new programme or an improvement satisfied the participants, in the same field, which means this seminar inquiring the advanced technology of Japan.

##### 2) Plans upon Returning to Their Countries

###### i) Mr. Huang Konghai (CHINA)

"I would like to improve the flood forecasting system by applying the facilities and study materials which were observed during the observation tours."

###### ii) Mr. Cipriano C. Ferraris (PHILIPPINES)

"Study materials and facilities in Japan are highly developed and it is likable to introduce them to the Philippines, but before doing that, I would like to improve the quality of electronics maintenance specialist. Furthermore, I would like to study and compare to hydrologic models which I observed

in Japan with that of Philippines."

iii) Mr. Salvador G. Estudillo (PHILIPPINES)

"Japan, like the Philippines, is beset with many disasters like typhoons, and what I have gained in this seminar is very useful and informative, I must make the best use of it, but I can't think of any concrete project right now."

iv) Mr. Niran Kalayanamit (THAILAND)

"I would like to convey all the knowledge and experiences that I acquired in this seminar not only my colleagues but also Civil Defence School which is scheduled to start this September 1983."

### 3) Request to JICA

Many participants request JICA to set up a monitoring system to see to it that they are really implementing the knowledges and skills they learned from the training in their respective countries. This is what JICA should take into consideration not only this seminar but also in other seminars.

### 4) Summary of Questionnaires

The followings is the summary of the questionnaires which we conducted on the participants to evaluate the seminar.

QUESTIONNAIRE  
FOR  
FINAL EVALUATION SHEET

- I. OBJECTIVES
- II. CURRICULUM DESIGN
- III. EXTRA-CURRICULUM ACTIVITIES
- IV. TRAINING OUTCOMES
- V. LIFE IN JAPAN

NAME: \_\_\_\_\_

SUBJECT: \_\_\_\_\_

COUNTRY: \_\_\_\_\_

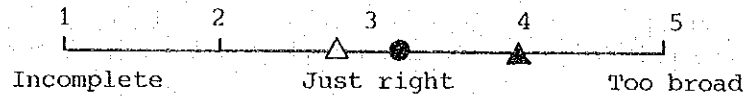




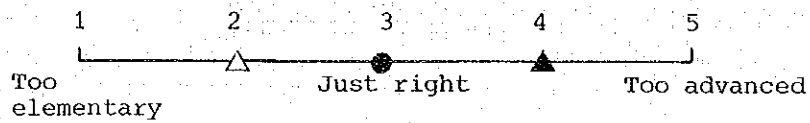
II. CURRICULUM DESIGN

(1) Coverage, Level, Time Allocation, Intensity and Duration;

a) Coverage of the subjects

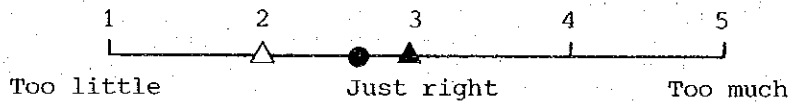


b) Level

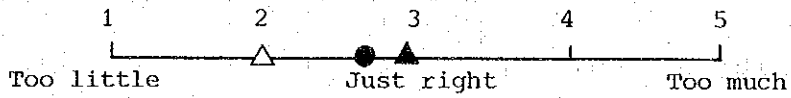


c) Time Allocation to:

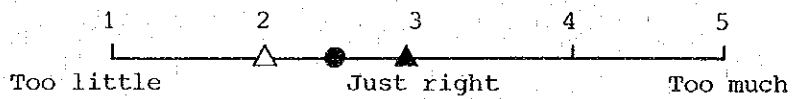
i) Lectures



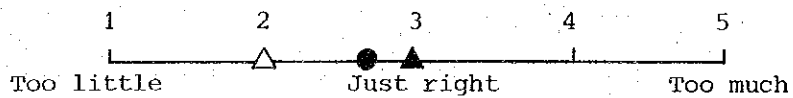
ii) Discussions



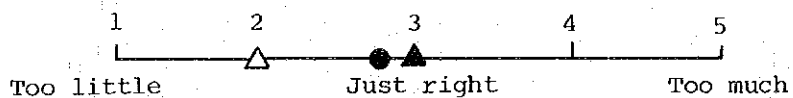
iii) Exercises & on the Job Training (OJT)



iv) Observations



d) Intensity



e) Duration



For the participants who marked degree 1 or 5 of the above items;  
We would like you to give us some comments.

Every participants are not applicable.

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(2) Programming of the Topics

Do you think that the topics were programmed systematically?

If you do not, please give us your suggestion to improve the  
training much better.

All participants said that no further suggestion for improvement  
of programming of topics.

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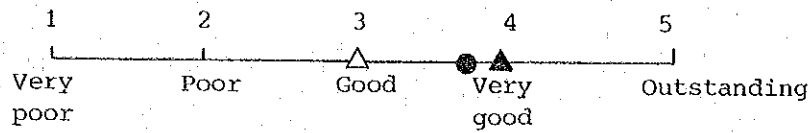
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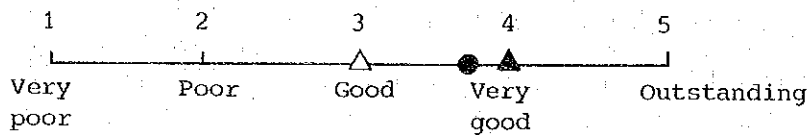
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III. EXTRA-CURRICULUM ACTIVITIES

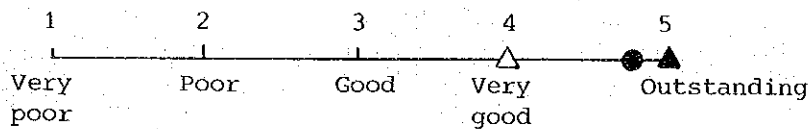
(1) Pre-course information (Briefing & Orientation):



(2) Arrangement for observation of the relevant facilities:



(3) Friendship with the japanese lectures & others



For the participants who marked degree 1 or 2 of the above items;  
we would like you to give us somments.

Every participants are not applicable.

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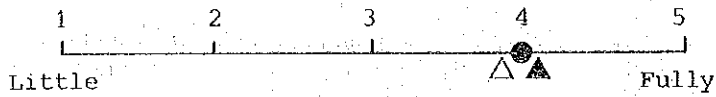
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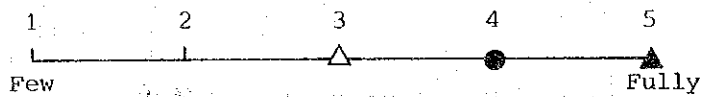
IV. TRAINING OUTCOMES

(1) Attainment of techniques and knowledges;



(2) Application of techniques and knowledges;

Do you think that you will have chances to make good use of the techniques and knowledges you have attained in this \_\_\_\_\_ in your countries?



For the participants who marked degree 1 or 2 of the above items; We would like you to give us some comments.

Every participants are not applicable.

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IV. LIFE IN JAPAN

(1) What were most difficult or embarrassing matters in your life in Japan?

a. It's said that reading of study materials in Japanese characters  
is difficult

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(2) What were most memorable or enjoyable matters in your life in Japan?

a. Meeting with other personalities from Japan and other countries

b. To ride in the "Bullet Train" (Shinkansen Line) for observation  
tours to training facilities

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V. TECHNICAL REPORT

(SUGGESTIONS & RECOMMENDATION on DISASTER PREVENTION in  
Japan PARTICIPATING COUNTRIES.)





REPORT ON TOPEX SEMINAR

June, 30-August, 6, 1983

New City Hotel, Shinjuku

Mr. Salvador G. Estudillo

PHILIPPINES

I. INTRODUCTION

The Typhoon Operational Experiment Seminar on both the Hydrological and Warning Dissemination/Information Exchange Component participated in by 4 persons from 3 different Typhoon Committee member countries was conducted under the auspices of the Japan International Cooperation Agency (JICA).

Various activities had been injected in the programme to allow the participants to be more flexible in their understanding of the subject matter and even requires an ample time to know the real meaning of the course presented.

Despite the time element involved, the Seminar has given the participants the knowledge and experience that plays an important role in the economic and social development of their respective countries.

The subjects taken up coupled with film presentation in some areas of interests that dealt on various disasters, laws policies, countermeasures, problems and solution, has greatly helped the participants basically in understanding facts and methods that can be adopted in their respective countries and developed a more responsive counter disaster plan that would to the needs of the people particularly in the grassroots.

One aspect which could not be left forgotten during the Seminar was the interaction among participants from various nations and one of these was the interchanging of different cultures and ideas.

As a whole, the Seminar was well organized and special appreciation is sincerely expressed to the Training Coordinator for his efficiency and diligence.

## II. BRIEF DESCRIPTION OF THE ACTIVITIES

### 1. FIRST WEEK

#### 1) Briefing on the rules and regulations of JICA and General Orientation

The Briefing and orientation was very well-prepared and designed to enable the participants to understand some limitations and restrictions during their stay in Japan. Such a procedure was very imperative because it has given them the basic ideas to protect themselves from any unforeseen circumstances.

Likewise, the orientation has given the participants more knowledge about Japan; its culture, traditions, economy, social life and so forth. This kind of orientation system has helped the participants to understand fully very Japanese people and fostered a better personal relationship among them.

### 2. Second Week

#### i) Courtesy Call at Ministries and other Governmental Agencies

#### ii) Lectures on the Hydrological Component

The participants briefly paid a courtesy call at Ministries and other Governmental Agencies. There was a warm reception accorded to the participants and exchange of information between their countries and that of the host country had taken place including the participants impression of Japan.

Lectures on the Hydrological Component was the main concern during this weeks session. Subject on Flood Forecasting, Estimation and Risk Mapping was quite difficult for some participants, because their field of study was on the other Component. Personally, I admit that I find difficulty in understanding the subject matter in the first stage, but because of clarify and well-organized presentation, I have come to understand the subject.

### 3. Third Week

#### i) Observation Tour

#### ii) Evaluation Format Making on Hydrological Component

Observation tour to some flood control facilities in OSAKA and KYOTO Cities and Evaluation Format making on Hydrological Component was the main activities during this period.

The observation tour has provided us a deeper sense of interest on flood control programme in our country because of the usefulness and advantages our country will get. And besides, the techniques procedures and systems we acquired out of these tour (add) will be able to supply the technical know-how of some technical personnel in the development of such programme.

The flood control facilities, like the YODO River Dam. Amagase Dam and the others impressed us very much because public safety is considered the Key Factor in the construction of such facilities. And besides also, such facilities has enhanced the social and economic condition of Japan.

#### 4. Fourth Week

During this period, emphasis was on the Warning Dissemination/Information Exchange Component. As stressed by some lectures, one of the Key factors that should be given ample consideration in the preparation of Country Disaster Plan is the warning system.

A visit to Shinagawa Ward Office obviously impressed us on the Warning System the Government of Japan has established. The equipment are very sophisticated that areas surrounding the Ward are provided with necessary warning facilities to respond to warning from the authorities. Such a kind of system should be introduced by the Japanese Government to other Asian Countries in order to improve their warning capability in the interest of public safety.

### III. RECOMMENDATION SUGGESTIONS

The Philippine Government through the Office of Civil Defense has considerably improved its Counter Disaster Plan particularly on Warning Dissemination. Several operational experiments on the effectiveness of warning capability has been conducted by the Office in cordination with related agencies to test the dependability and reliability of the exsiting warning system. Although the test was successful, but some problems have been met along the way. The kind of equipment we had presently is a little bit did,

and we need a more new and sophisticated on ones. Another factor that is considered a key to successful unplementation of warning dissemination is the number of personnel to handle the communication equipments. This has been a long problem of our office and basing on this experiences, the following are hereby recommended and/or suggested.

1. Acquisition of high (if not sophisticated) communication equipment capable of longer operation to be established in the Regional Office and disaster-prevention areas.
2. Recruitment of qualified and capable personnel to handle the operations of communication equipment.
3. Training of technical personnel on radio communication maintenance to ensure the service ability of the rquipment.
4. Conducts various exercises on warning dissemination to improve the technical personnel skills and techniques.
5. Organization of Flood Defence Organization to in areas where floods are commonly to strike in order to look out for and defend against the disaster thus maintaining public safety.
6. Production of materials related to public information and education translated into local dialects to be easily understood by the people particularly in the grass roots level.
7. Enhancement of personnel knowledge on disaster prevention techniques and skills by attending JICA Group Training Course in cordination with the Ministry of Foreign Affairs and the National Economic and Development Authorities.

#### IV. DISASTER PREVENTION MEASURES IN JAPAN AND THE PHILIPPINES

The sad experiences that Japan had ecountered in the past from various type of disaster ranging from man-made to natural disasters has given her a large perspective of developing the country into a modern and industrialized nation and providing the people with the necessary comforts and luxuries, Japan has realized that developing a small country into a powerful one should consider the nationalistic approach in the implementation of the system. Not withstanding the occupation of an allied forces in the country, the Japan

Government has adopted their own language as the medium of instruction in all fields to enhance the idealistic view of every citizen thus making them more patriotic and proud.

The attitude of Japanese people coupled with their respect of the law has tremendously improved their social status thereby promoting peace and tranquility in an atmosphere of harmony and love. The efficiency of the people towards their endeavours and the education system too has greatly helped their living conditions in particular and the economy of Japan, in general.

The Government of Japan has embarked tremendously various kinds of project to safeguard the lives and properties of its people. These projects has been realized because of the sincere and delicated efforts of those in the government agency and the strong cooperation and cordination among the agencies. The Flood Control facilities built by the Japanese Government did not only protect the people from any unforeseen circumstances but also improved their working conditions. The construction of tams in various the urban and rural areas too. Water, electric and irrigation facilities did helped the people in improving their social conditions.

In this context, the Disaster Prevention Programme established by various Ministries in Japan was very exceptional. The passing of several disaster prevention laws gave the implementing agencies the necessary foundation to embark a well-designed project to protect the people. The cooperation of the non-governmental agencies in the promotion of disaster prevention, particularly in the warning dissemination, public information and education was a big helped in realization of the programme.

On the other hand, the Government of the Philippines has also embarked a comprehensive disaster preparedness programme designed to protect the people from any unforeseen circumstances and to alleviate the sufferings of the people. These programme was given more emphasis by the passing of a presidential Degree No. 1566 to strengthen the national disaster capability and promote a concerted efforts in mitigation of disaster. Although our facilities is not very impressive as Japan, our government is trying its best to improve its disaster response capability particularly in the field of warning dissemination and public information and education. Various disaster

related Governmental Agencies are giving their all-out support and cooperation in establishing a comprehensive counter disaster plan. Disaster prevention measures applied in Japan and the Philippines are on the same level considering the geographical locations of these two countries.

In the overall aspects of Disaster Preparedness, both governments are endeavouring to provide their respective constituents the necessity to live longer.

Finally, the Philippines Government is seeking a technical assistance from developed countries to provide our personnel the necessary techniques and skills on disaster Prevention and mitigation. On the other hand, Japan has a broader and larger technical knowledge in these field to assist developing nations. In this purview, it is my belief that Japan should help developing countries improved their technical know-how by continuously and liberally transferring their expertise specially on disaster prevention and mitigation.

#### V. CONCLUSION

The Seminar has given us that deep sense of involvement towards strengthening our disaster response capability to ensure the safety of our people. Seminars on Disaster Prevention and Mitigation must be (conducted) continuously conducted and participants should be from countries where is commonly beset by disasters. This will give them enough knowledge to prevent the spread of disaster disaster damages and effects.

At the outset, I must say that the seminar I have just afforded will not only improve the cooperation and coordination in this particular field of study but also the friendly relations between Japan and our country.

Allow me therefore to express my profound gratitude for allowing me to participate in this kind of endeavour. I will be looking forward for another trip to this beautiful country in the coming years.

REPORT ON  
TOPEX SEMINAR IN HYDROLOGY, WARNING DISSEMINATION  
AND INFORMATION EXCHANGE COMPONENT

by Mr. Cipriano C. Ferraris  
PAGASA (Weather Bureau),  
Philippines

I. INTRODUCTION

The seminar in Hydrology, Warning Dissemination and Information Exchange Components of TOPEX was conducted by the Government of Japan through its International Cooperation Agency (JICA) for the purpose of providing a means by which the participants from ESCAP-member countries are given the opportunity to broaden their knowledge in the science of hydrology and to obtain additional information on recent advances in technology in this field. The Seminar also served as a forum where the participants exchange their ideas and information.

The seminar through visits to the various facilities enabled the participants to see the various related installations including the brand on type of equipment used therein. Lectures were also given in the operations centers of some field offices on the development and application of the various methods or techniques in flood forecasting and warning. Actual demonstrations were made using highly sophisticated equipment as computers, radars, CRT graphic display, facsimile, etc. in making a flood forecast, the use of graphic display board and the Multiplex and telecommunication systems in the effective and timely dissemination of warnings. Demonstration on flood defense as applied to a particular river system was observed. Various facilities used in connection with public information dissemination at the local radio and television station were shown to the visiting participants. The role of Japan Broadcasting Corporation, NHK, as a sole, non-profit public service broadcasting organization in Japan was described.

The programme did not only include the TOPEX-related activities but also a general orientation course as well. Lectures were given on various subjects intended to provide a better understanding about modern Japan and its people. The orientation course also served as a medium wherein representatives of

various countries make friendly contacts and exchange their views or impressions about the host country and its people.

## II. BRIEF DESCRIPTION OF TOPICS PRESENTED IN THE SEMINAR

The seminar consisted of lectures, discussions and observation tours. The lectures include such subjects as flood estimation, flood risk mapping, flood damage assessment, flood defense program, flood prevention plan, dissemination of warning including method of announcement and transmission, public relations of disaster information, disaster and society, disaster preparedness and other topics of local applications.

The subject on flood estimation is considered a very relevant one. Some explanations of flood estimation with emphasis on method were given. More explanations were given concerning the pre-requisites in the design of flood forecasting systems, the conditions for the selection of flood estimation methods, background and related knowledge of methods used in Japan, and effectiveness and evaluation of security of flood estimation methods.

Flood risk mapping is also an important subject matter because it provides a description of the methods for the delination of flood prone areas subject to heavy damage as well as alternative measures in a comprehensive flood loss prevention plan. Considering that the preparation of flood risk maps is one important activity, the result of such study will certainly be useful not only in the area of flood loss prevention and management but also for the other purposes such as, land use, delination of areas suitable for evacuation purposes, flood forecasting and warning, infrastructure, regional development and others.

The topic on flood defense and disaster prevention plan emphasizes the need to provide some guidelines for flood defense organization, weather and river stage observation, communication and liaison, assignment of flood defense brigades, moveout and evacuation, and also for necessary materials, equipment and facilities. The procedure for the preparation of disaster prevention plan in the prefectural level was presented. The information in the form of a legislation is useful as guide in preparing similar plan in our country.



The existing set-up of the emergency communication network in Tokyo was established to ensure communication between Tokyo Metropolitan Government and antidisaster organization or within its ward by wireless communication in the event of the occurrence of earthquake, typhoon or flood. It is noted that the system is either a fixed system or mobile system. Quick dissemination of warning is ensured. The system is also used for information collection and transmission in case of disasters.

Damage assessment is one important activity not only of the Typhoon Committed Secretariat but also that of the Hydrology Component of TOPEX. The information on damage caused by typhoons or floods compiled in a manner in accordance with a universally-accepted method of assessment will be useful to the national planners, etc. for purposes of planning, operation and management of development or rehabilitation projects.

Some explanations were given on public relations on disaster information. These include a description of how Japan Broadcasting Corporation, NHK, plays its role as a disaster prevention public organization. The method of obtaining disaster information and how the disaster information and how the disaster information thus obtained is sent on the air was explained. Disaster broadcasting in terms of visual presentation is way ahead in Japan. The equipment where graphic display is obtained and flashed on the TV screen is something that should be introduced to the Filipino TV audience for them to better appreciate disaster broadcasting and understand fully the warning being flashed on the TV screen.

The concept of disaster, its relation to society and the spreading of the knowledge of disaster preparedness are intended to provide a better understanding about disasters, how to react appropriately in case of disasters. Also described are some disaster prevention and preparedness measures which have to be taken by individual and the need for the people to possess the correct knowledge of disaster preparedness.

Other topics have been presented to provide information on the activities of the Typhoon Committee Secretariat as well as case studies of some significant situations in Japan. These situations resulted in flooding in certain areas. The procedures used in the analysis of observed data may be useful in making similar studies of our own.

### III. SUGGESTIONS TO IMPROVE FLOOD FORECASTING ANY WARNING SYSTEM IN THE COUNTRY

Certain aspects need to be improved in our flood forecasting and warning system. Some suggestions or recommendations are hereby submitted for considerations. These suggestions were crystallized during discussions and exchange of ideas with the other participants, resource persons or lecturers. Individual observation taken during field trips were also taken into consideration. The suggestions or recommendations include the following, but not limited to;

- 1) Development of a runoff model subdividing the basin into sub-catchment areas using known models such as Tank Model, Storage Function Model, Unit Hydrograph Method, API Model in the major river basins in the Philippines.
- 2) Further refinement of the flood forecast procedures in the Pampanga River Basin. A 4-stage serial storage (Tank Model) model shall be tried. Sapang Buho point may be considered as a forecast flow point where discharge measurements have to be made.
- 3) Setting up of water stage warning points or flood makers at flood makers at flood prone areas in the Pampanga River Basin in relation to forecast points located upstream.
- 4) Intensified effort in the education and information drive in the disaster prone areas on disaster preparedness as part of the WD/IE component.
- 5) Flood risk study and mapping be carried out comprehensively based on methods used in Japan i.e., based on hydrological models; based on historical approach e.g. on experienced flood; and based on geomorphological approach e.g. topographical survey.
- 6) Method of typhoon damage assessment be reviewed taking into consideration new and better specification for reporting damage.
- 7) Intensified effort in spreading knowledge of disaster preparedness through seminars/workshops in the national, regional and provincial level, and the inclusion in the curriculum of the subject as part of school education for the young.

- 8) Intercomparison of hydrologic models used in the region by applying observed data from within to determine a more suitable hydrologic model for the basin.
- 9) A study to be undertaken concerning social behavior of communities during calamities and the translation of technical terms of warning terminologies into terms understandable by layman.
- 10) Endeavor to improve linkage between the PAGASA (Weather Bureau and Maharika Broadcasting Corporation, a government radio and television broadcasting organization, similar to the set-up between the Japan Meteorological Agency and NHK for quick public information service.
- 11) The Government of Japan through JICA be requested to continue to provide technical assistance to the PAGASA in the form of training and/or equipment, with application in the area of flood forecasting and warning, flood loss prevention and management, telecommunication/telemetry system operation and maintenance. The needs in these areas are greatly felt.

#### IV. CONCLUSION

The seminar may be considered to have attained its objectives. The knowledge obtained through lectures, discussions and observation tours may be used in making plans for the improvement of flood forecasting and warning system, warning dissemination and information exchange system in the country.

Flood forecasting procedures, for instance, will be further developed using the informations gathered during the seminar and the suggestions made therein. Some studies in operational hydrology shall be undertaken taking into consideration the Japan experience.

Flood estimation, flood damage assessment, flood studies, warning dissemination flood prevention and disaster preparedness have been presented in a manner and form that can be readily understood. It is hoped that the participants got maximum benefit from the presentation and may be in a position to the works related to the Second and Third Components of TOPEX.

Submitted  
4 August, 1983

## REPORT ON TOPEX SEMINAR

Mr. Huang Konghai

China

on Aug. 5, 1983

### I. INTRODUCTION

Under the conduct of Japan International Cooperation Agency, the TOPEX Seminar on Hydrology Component and Warning Dissemination/Information Exchange has been ended satisfactorily. There are four participants of three countries attending this Seminar. These countries are Philippines, Thailand and China. The duration of the seminar is 37 days from July 1 - August 6.

### II. GAINS IN THE TOPEX SEMINAR

In the period of more than a month, we have presented and discussed each other on Country Reports. We have been given the lectures on Flood Forecasting and Warning Flood Risk Mapping, Disaster-defense System and Warning Dissemination/Information Exchange in Japan and soon by the lecturers of Ministry of Construction, National Land Agency, Science and Technology Agency of Japan, etc. Moreover, combining with the lectures above-mentioned. We visited the Flood-Defence Training of Tone River and observed the Flood Forecasting System and facilities of Yodo River, the Disaster Defence System in the region in SAKAE town, Chiba Prefecture, the Methods and Activities of Relief of Japanese Red Cross Society at the Disaster Out reak, etc. Through study and observation above-mentioned, I have acquired a lot of knowledge on hydrology and warning dissemination/information exchange. Also I have learnt that the government of Japan is how to pay great attention to the work of disaster defence and disaster prevention and Japanese people have accumulated rich experience through time-honoured practice in the struggle against natural disasters and have achieved great achievements. I will take there knowledge which I have learnt from Japan to my country and make a effort for further improving our work on hydrology and warning dissemination/information exchange.

### III. RECOMMENDATION AND SUGGESTION

I work in the Zhejiang Province's General Hydrological Station in which the Master Station of Hydrological Data Telemetering and Flood Forecasting System of Puyang River Basin which was admitted by TOPEX is installed. The system is similar with the Flood Forecasting System of Yodo River in Japan, but it is not so perfect as the System of Yodo River. In order to perfect the function of the System, we have much work to do. Such as, the reliability of rainfall and water-level recorder with high reliability should be provided with the automatic calling set and sound-recording set should be provided in the terminal device, the plotter interface software should be designed in order that the storm-rain distribution diagram and discharge hydrograph might be plotted automatically. I think that the hydrological data telemetering and flood forecasting system is a very important component of the automation study to water-irrigation and flood-control management and it is the orientation of hydrological development from now on. I wish I could come to Japan again in future so that I could study the technique and method of the hydrological data telemetering and flood forecasting system of Yodo River.

Finally, please allow me to take this opportunity of expressing my sincere appreciation for all the lecturers and following units; Japan International Cooperation Agency, Ministry of Construction, National Land Agency, Science and Technology Agency, Fire Defence Agency, Japanese Red Cross Society, and NHK, etc.. You have been most helpful since my arrival here. If I have achieved something in my study, it has been due to your guidance and help. I hope to see you someday in my country. I'll never forget the hospitality I've received during my stay in Japan. Thank you very much for all the trouble you have taken!

TECHNICAL REPORT  
ON TOPEX SEMINAR IN HYDROLOGY AND WARNING DISSEMINATION/  
INFORMATION EXCHANGE COMPONENT

Submitted by Mr. Niran Kalayanamit

I. INTRODUCTION

As a participant from Thailand, first of all, I would like to express my sincere appreciation to the Government of Japan and JICA (Japan International Cooperation Agency) for inviting us to take part this TOPEX Seminar. I wish to say that the purpose of the seminar have been perfectly achieved. On this seminar, throughout the lectures, discussions and observation tours, I have experienced and got a lot of knowledges on the Component of Hydrology and Warning Dissemination/Information Exchange, especially from viewpoints of modernized science and technology. Moreover, all contents of lectures provided in this seminar have been very useful and applicable to our country. Japan is a developed countries which has been all fullfilled in terms of the civil defense aspect, the efficient disaster countermeasures system and adequate equipments for the use within its society. Presently, Thailand is overwhelmingly populated, and very much modernized. These situations outgrow all techniques of daily living of the people. Following the progress of the country, the hazards or disasters become much more violent. These disasters encompass all kinds of natural and manmade causes, which means not only disasters from fires, storm surges or floods but also damages from drought, locusts, pests sickness, weeds and shortages of both good forming, land and well drinking, water, sabotages and so on. According to these results, Thailand has been trying to promote all techniques of disaster prevention and mitigation of all phases.

II. GENERAL CONCEPTS AND CHARACTERISTICS ON WD/IE SYSTEM IN THAILAND

In a fact, it will be noticed that Thailand has never been hit directly by typhoons. Only few typhoons or tropical storms, in some occasions, can partially hit Thailand, but because of mountain ranges along their land-paths, they are weakened and downgraded to become depressions. However, these bring heavy rains causing flood situations, both flash floods river floods, in

various parts of upper Thailand, while in lower Thailand, floods and storm surges are more characteristic.

The figures shown below indicate apparently the damage caused by 3 big disasters in the regional and local areas since 1980 - 1982.

YEAR	DISASTER		D A M A G E		
	VARIETY	NUMBER	BAHT	DEATH	INJURED
1980	FIRE	579	464,200 715	18	78
	STORM	458	33,871,503	14	29
	FLOOD	37	1,549,085,487	61	7
1981	FIRE	684	412,221,135	35	20
	STORM	438	14,226,957	18	12
	FLOOD	44	314,351,038	73	7
1982	FIRE	702	545,224,924	13	32
	STORM	348	24,738,272	12	21
	FLOOD	16	224,183,917	32	1
Total		3,306	3,582,103,948	276	207

Compiled by; (1\$ U.S. = 23.05 baht)

Local Administration Department, Ministry of Interior

By considering these figures, I can find out that the number of deaths caused by flood in each year is more than the others caused by fire and storm in spite of fewer times of occurrence. However, most damages are resulted by flood storm and fire inevitably.

To encounter these challenges as mentioned above, Thailand has promulgated the Civil Defence Act of 1979 on 22nd March 1979. The main authority is delegated under this Act to the Ministry of Interior. The Act covers all aspects of disasters including those caused by Typhoons and related floods. It provides both for prevention and preparedness as well as relief and rehabilitation activities. This Act also provides the National Civil Defence Committee (NCDC), which is the National co-ordinating Committee is chaired by the Minister of Interior, with the Secretary of State for the interior as

Vice-chairman and comprised of other Ministries or Agencies representatives concerned, and Department of Local Administration acting as Civil Defence Secretariat.

According to this act, my office, the Civil Defence Division has the important role on WD/IE component, which is the one of many divisions of the Local Administration Department, Ministry of Interior, which is responsible for the Local Administration's work concerning operations by Civil Defence Authorities for the purpose of protection against and relief of damage caused by public disasters. In the present days, the Public Disaster Prevention and Relief Plan, and the evacuation of the people and of government facilities which are two of the four principal civil defence plans have been already laid down in all levels in Thailand.

WD/IE are mainly responsibilities of the LAD (Civil Defence Secretariat), in case of emergency, the LAD, on receipt of warning from the Meteorological and Hydrological services, will immediately convey the warning to the Directors of CIVIL Defence Committee in the areas to be affected by typhoons or related disasters so that the regional or local authorities can arrange plans for disaster prevention and relief. The announcement can be made through radio, telephone, telex, hot line etc. and also further dissemination is made to the public through radio broadcasts, television and other warning systems such as the besting of drums, gongs etc., especially in remote areas. Besides, the LAD is also responsible for study and research, test exercises, damage assessment, coordination among agencies, popular participation public information and so on.

### III. SOME SUGGESTIONS AND IMPROVEMENTS

Our government has been trying to promote its civil defence system. By this time, the Civil Defence Division under control of the Local Administration Department has already drafted the Civil School Project which provides to start first course opening in this September 1983. The objectives of this Civil Defence School Establishment are to be an academic institute to provide the seminars and trainings to all civil officers, government officers, Public utilities' officers, many volunteers and other private sector's employees, to be aware, to understand and to be still enough to operate any civil



damages' protection effectively. This project is one of the advanced improvement on WD/IE component which may contribute to a better result of Thailand in this near future. However, we still have many problems to improve on WD/IE system.

The following suggestions may be helpful for improving on WD/IE system.

1. The link between the Meteorological and Hydrological components and the WD/IE component should be further developed through more frequent and continued contact or exchange of information.
2. Project for procurement of better communication equipment and increase communication links with the remote areas.
3. Need more facilities and equipments for supporting communication in order to disseminate warning to disaster prone remote areas, particularly transport facilities such as helicopters, automobiles, flat bottom boats etc.
4. Forecasting system and collecting-data system should be more efficiently developed by introducing modernized and sophisticated instruments, rader, sattelitte and computer systems etc., in order to get the reliable informations for warning issues.
5. Implementation for public education on disaster preparedness plans, warning measures should be taken more and more, especially in flood prone areas, and also evacuation procedure through pamphlet and brochures should be made and written in simple language and with illustrations.
6. Another important point is social order and law. Human being, housing in risky area, high-rise building construction and so on, there should be systematically and effectively controlled by law for disaster counter-measures planning. Recently, about April 1983, our country was hit by earthquake which had never been before. The earthquake hit 3-4 times in the some month, particularly in the control part of Thailand including Bangkok Metropolitan areas. Many people were excited and frightened because they had never experienced this kind of disaster before. The head-line of earthquake was reported seriously. Fortunately, no enourmous damages over country because we were hit by small earthquakes,

only some damages on high-rise buildings and ineffective constructing. This example is a very good one to be warning signal for coming disaster in the future. So, social order and law or regulation concerning disaster countermeasure plan should be also improved and recognized beforehand.

However, I have a feeling that, no matter how hard the Thai Government has tried to cope with those disasters, it has always been non-adequate and still less effective because the society has lacked of various types of modern technical instruments and also lacked of expenses for the applicable disaster prevention and mitigation, and our country has several parts to be developed at the same time.

#### IV. CONCLUSION

On my summary, it should be recognized that this TOPEX seminar has been perfectly achieved and very useful. I have learned a lot of beneficial knowledges and experiences on this seminar. The contents are cover both hydrology and WD/IE components. Though I am not specialist on hydrological component, I have learnt beneficial knowledges on this part such as flood forecasting model, comparison of model, flood risk mapping, rainfall prediction, evaluation of accuracy of forecast, flood defence programme, observation of flood defence training, observation of modern technical instruments and so on. After I go back to my country, I will relay all knowledges and experiences that I acquired on this seminar to my colleagues and the other agencies concerned, particularly on WD/IE component which is the direct concern in my office will be submitted and improved immediately for more efficient counter-disaster programs.

Before ending my report, I would like to take this opportunity to express my sincere thanks again to the Japanese Government, especially JICA which has kindly supported TOPEX activity by arranging this seminar in order to provide us opportunities to exchange opinions and experiences.

Thank you.

APPENDIX I

LIST OF PARTICIPANTS TO THE SEMINAR in 1981 & 1982



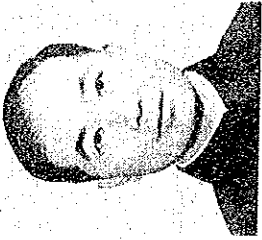

APPENDIX I-1. LIST OF PARTICIPANTS TO THE SEMINAR in 1981

COUNTRY	NAME	PRESENT POST OF PARTICIPANT	ADDRESS
CHINA	MR. JIANG YI-YUEM		
KOREA	MR. HAN SOO NAM		

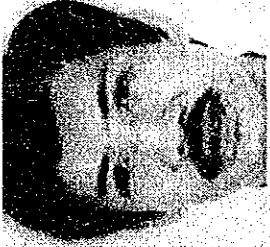

COUNTRY	NAME	PRESENT POST OF PARTICIPANT	ADDRESS
MALAYSIA	MR. CHONG SUN FATT		
PHILIPPINES	MR. POLU P. ENCARNACIYN		

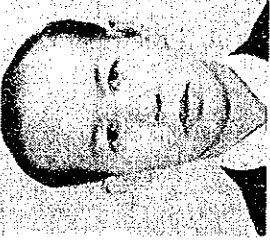
COUNTRY	NAME	PRESENT POST OF PARTICIPANT	ADDRESS
THAILAND	MR. AMRON CHANTANAVIVATE		

APPENDIX I-2. LIST OF PARTICIPANTS TO BE PRESENT TOPEX SEMINAR in 1982

COUNTRY	NAME	PRESENT POST OF PARTICIPANT	ADDRESS
CHINA	<p>MR. <u>CHU YONG-AN</u></p> 	<p>Engineer, Flood Forecasting, Zhejiang Provincial Water Conservancy Bureau, Hangzhou Province</p>	<p>* OFFICE ADDRESS Mei Hua Bei, Hangzhou City, Zhejiang Province, CHINA</p> <p>* HOME ADDRESS - Gitto -</p>
MALAYSIA	<p>MR. MOHAMAD <u>FADZLIAH</u> <u>BIN MAHMOOD</u></p> 	<p>Hydrological Engineer, DIY (Drainage Irrigation Dept.) Ministry of Agriculture and Rural Development</p>	<p>* OFFICE ADDRESS Jalan MAHAMERU, Kuala Lumpur, MALAYSIA</p> <p>* HOME ADDRESS 16, Jalan SETIARASA, Bukit Damansara, Kuala Lumpur, MALAYSIA</p>



COUNTRY	NAME	PRESENT POST OF PARTICIPANT	ADDRESS
PHILIPPINES	MR. NESTOR L. CANUEL 	Weather Specialist, Weather Bureau, P.A.G.A.S.A.	* OFFICE ADDRESS 1424, Quezon Avenue, Quezon City, PHILIPPINES  * HOME ADDRESS 2351 A. Aquino Street, Metro Manila, PHILIPPINES
THAILAND	MR. THANADDEJ CHOKESUWATTAN- ASKUL 	Chief of Studies and Research Section, Civil Defence Division, Local Administration Department Ministry of Interior	* OFFICE ADDRESS Nanglerng, Bangkok, THAILAND  * HOME ADDRESS 752-2-3, Charoennakorn Road Bangkok, THAILAND

COUNTRY	NAME	PRESENT POST OF PARTICIPANT	ADDRESS
THAILAND	<p>MR. PRASONG JITSERI</p> 	<p>Hydrologist, Hydrology Division, Royal Irrigation Department.</p>	<p>* OFFICE ADDRESS</p> <p>* HOME ADDRESS 95/49 Tivanon Road, Pakkreo, Nonthaburi, THAILAND</p>